Safety in Construction

Construction work is quite hazardous, and safety cannot be overemphasized. Most common accidents or mishaps can be grouped into four categories, falls, electrocution, being struck by or caught between objects. Most of these accidents occur due to ignorance, negligence, or just gross indiscipline and the disregard of best safety practices.

According to the Bureau of Labour Statistics, there are roughly 15,000 construction-related injuries. Construction has grown rapidly in developed and developing countries over the years. But with safe practices and proper training, as well as the adoption of new technology, we can help reduce injuries and fatalities while improving efficiency.

Technology has proven to be very useful in protecting life and preventing mishaps. Imagine a world without seat belts or airbags. There are many reasons you should consider and implement the use of technology and appropriate policies on and off-site. Let us take a look.

Tackle Problems Before They Occur

There is no doubt that technology helps us model and plan things. With the right tool, we can quickly identify the problems and challenges ahead by carrying out analyses, tests, and studies. One big way tech can be used to identify and solves problems ahead of time is the use of drones to scope out construction environments. This can reveal problematic or challenging areas that need more attention and proper planning without risk.

Technology can also be used to improve training and orientation time on site. For instance, new workers can be quickly orientated to the on-site dangers. This is often achieved through the use of mobile devices to relay and disseminate information quickly. Coupled with proper documentation, custom training or video lessons can be given out to fresh or experienced workers rapidly and effectively. Proper training and awareness of problem areas can significantly reduce injuries and fatalities. Sensors can even be used to monitor exposure levels, volatile organic compounds, dust particles, and other parameters to prevent exposure to these harmful conditions. Real, live monitoring can also be done on-site to help gather data for analysis and study. This results in quick response times to challenges faced in construction.

Accessibility Is Key

Because of the delicate nature of some construction projects, unique training and procedures must be tailored to fit each.

The use of mobile devices can facilitate practical training for the job. This form of training can be customized to fit the needs of the situation. Not only that, but precise and specific instructions can be seamlessly conveyed to everyone. Time spent on off-site training can be reduced greatly, which is money saved. Sometimes, traditional training may not be adequate for

everyone, as some may need to go over information more than once, as they may be going too fast to fully comprehend.

These problems are easily addressed using technology. Instructions and tutorials can be revisited before the start of a day's job. This helps to reinforce the knowledge and safe-practices required.

The use of virtual simulations can also monitor and track real-time progress workers. These virtual 3D simulations give specific training for machine-operators, and trainees to expose them to different scenarios without acting it out in real life. This affords the preparation, training, and experience to tackle any challenge that may come their way.

There are safety-related software packages that can be used to reduce human error in operations. Some safety software can even adjust lifting speeds of a machine match to the weight of the object carried while gathering relevant data on the machine's performance.

Utilize Technology Effectively

Lapses in communication can be very dangerous and costly on-site. Information also shouldn't be relayed by screaming. With all the noise and human error, critical information can be easily altered by accident. A proper communication chain must be established to send clear and concise messages. The use of technological devices improves the timely flow of communication on a site. For instance, instructions and safety information can be instantly transmitted to workers on-site through their smartphones, walkie-talkies, and other wearable devices. Customized instructions and procedures can even be communicated to people who speak other languages. All of this ensures the same precise education and training can be given and executed across different demographics, which is undeniably crucial for protecting life and property.

Due to the constant movement of workers from various tasks and job sites, managers and supervisors may be left in the dark about the competence of their workers in regards to safety. There is a vital need for proper monitoring and tracking of workers' knowledge, training, and experience, especially when it comes to safety. Digital training platforms can help keep track of their training, progress, while safely storing the data digitally, which can be easily accessed from any mobile device. With ID cards, QR codes, and cloud computing, contractors can easily access important information about their workers. Everyone needs to be accountable.

The use of technology has also improved safety in other ways. There exist exoskeletons that can help workers support some of the load when lifting and carrying things, protective garments that inflate during a fall to protect people, and delicate sensors that have a plethora of applications on-site.

Other factors, such as teamwork, improving morale, and innovation in methods, are useful in this regard. Adopting the right technology and adhering to safe practices (such as OSHA guidelines and regulations) have been shown to reduce cost and time, improve work efficiency and training quality. All these things are guaranteed job sites much safer.